WELLTECH
NextGen CTI Solutions

WellGate 3804 FXO

USER MANUAL

Welltech Computer Co., Ltd.

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1. Introduction

The WellGate 3804 gateway provides voice/fax service over IP network with H.323 v3 protocol. By connecting to your existing ADSL or cable modem service, which allows the use of a single, network for voice and fax services with consequent saving in network infrastructure and greatly reduced telephone charges. Ideal solution for providing low cost communications between headquarters and branch offices in the world, as well as for SOHO and office telephony applications.

WellGate 3804 provides 4 ports analog line to connect local PSTN/PTT interface (FXO), and converts voice/fax signal onto IP network. The management feature is via RS-232C COM port and TELNET.

1.1 Features and specification

General Features

- ITU-T H.323 v3 compliance

- Automatically Gatekeeper Discovery
- Peer-to-Peer mode (non-Gatekeeper)
- Support auto-attendant (2nddial Tone / Voice greeting)
- Dimensions: 221mm(W)*42mm(H)*217mm(L)
- Line hunting
- 4 RJ-11 FXO ports
- E.164 (Telephone Number Plan)
- DTMF dialing
- DTMF detection/generation
- TFTP software upgrade
- Remote configuration/reset via Telnet
- LED indication for system status
- LAN interface: One RJ-45 connector of 10Base-T
- Microsoft NetMeeting v3.0 compatible
- Support static IP and DHCP
- QoS by ToS (Type Of Service)
- SNTP (Simple Network Time Protocol)
- Security: Password setting

Audio feature

- Codec -- G.711 a/μlaw, G.723.1 (6.3K/bps), G.729A (Optional)
- VAD (Voice Activity Detection), CNG (Comfort Noise Generate)
- G.168/165-compliant adaptive echo cancellation
- Dynamic Jitter Buffer
- Bad Frame Interpolation
- Call Transfer (H.450.2)
- Call Forward (H.450.3)
- Call Hold (H.450.4)
- Gain Settings
- Provide Call Progress Tone: Dial tone, busy tone, call-holding tone and ring-back tone

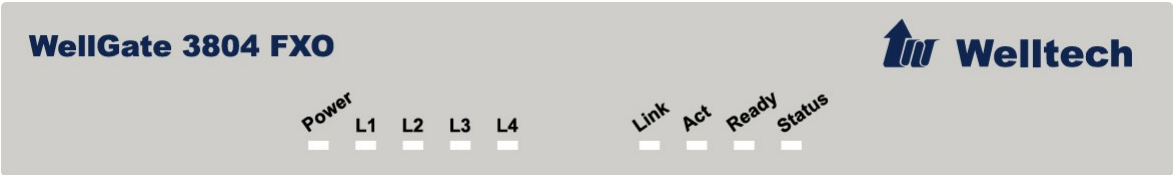
Management Features:

Two easy ways for system configuration

- Console port: RS-232C port
- TELNET

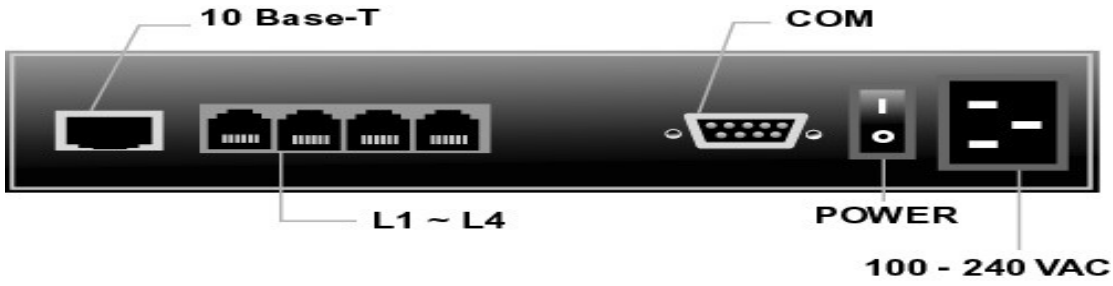
1.2 Appearance

Front panel: The LED light provides system message of WellGate 3804.

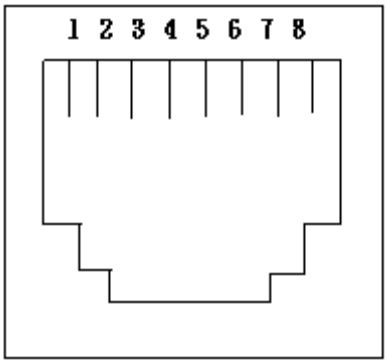


Power : Light on means WellGate 3804 is power on.
L1-L4 : Light on means the line is in use.
Link : Light on means WellGate 3804 is connected to the network correctly.
Act : LED should be light on and in flash display when data is transmitting.
Ready : 1. Light on and in slow flash means WellGate 3804 is in operation mode.
Status : 1. Light on means WellGate 3804 successfully registered to Gatekeeper when it is set as Gatekeeper Mode.
2. LED flash means WellGate 3804 is not registered to Gatekeeper when it is set as Gatekeeper Mode.
3. Or when WellGate 3804 is in downloading mode, LED should be flash as well.
4. Light off means WellGate 3804 is in Peer-to-Peer Mode.

Back panel:



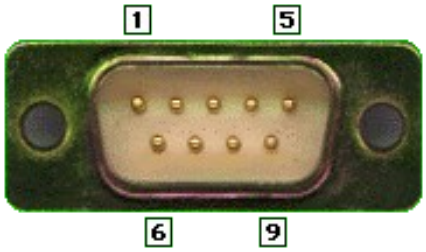
1. **10 Base-T:** RJ-45 Modular Jack Female connector with 10 Mbps Ethernet.



PIN 1, 2: Transmit
PIN 3, 6: Receive

2. **COM:** RS232 console port (9-pin Male connector, as the same as the computer).

Male connector (as the same as the PC)



9 PIN D-SUB MALE at the WellGate 3804

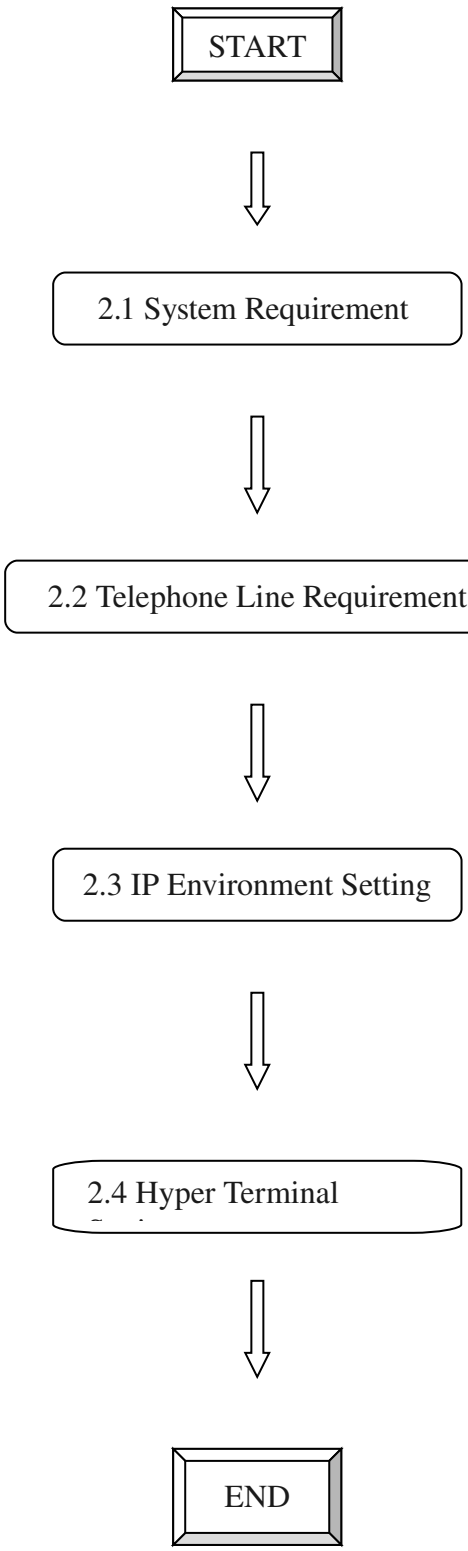
Pin	Name	Dir	Description
2	RXD	□	Receive Data
3	TXD	□	Transmit Data
5	GND	–	System Ground

3. L1 ~ L4: RJ-11 (PSTN or Extension Line of PBX)

4. On / Off: Power switch on/off.

5. 100 - 240 VAC: AC Power supply.

2. System Operating Procedure



2.1 System Requirement

1. One PC (a) Pentium 100 or above, 64 MB DRAM, Windows 98 or above.
   (b) Network card (RJ-45) & COM port
2. One standard RS-232 straight cable with **two female connectors**

depended on the different model.

3. PSTN lines / PBX extension lines (up to 4 lines).
4. Software tools (a) Hyper terminal, telnet (Windows OS included)
   (b) Gatekeeper (optional)

2.2 Telephone Line Requirement

Two kinds of analog lines can be connected to RJ-11 of WellGate 3804.

1. PSTN (Public Switched Telephone Network, POTS) or
2. PABX (Private Automatic Branch Exchange) / PBX (Private Branch Exchange) extension line.

PSTN

1. It is necessary to provide PSTN/POTS telephone lines in order to plug into RJ-11 of WellGate 3804.
2. The maximum telephone lines are up to 4.

PABX / PBX

1. 4 PSTN lines can be replaced to the 4 extension lines of PBX.

Note: Since the Line function feature starts from L1, please plug the telephone lines from L1 to L4.

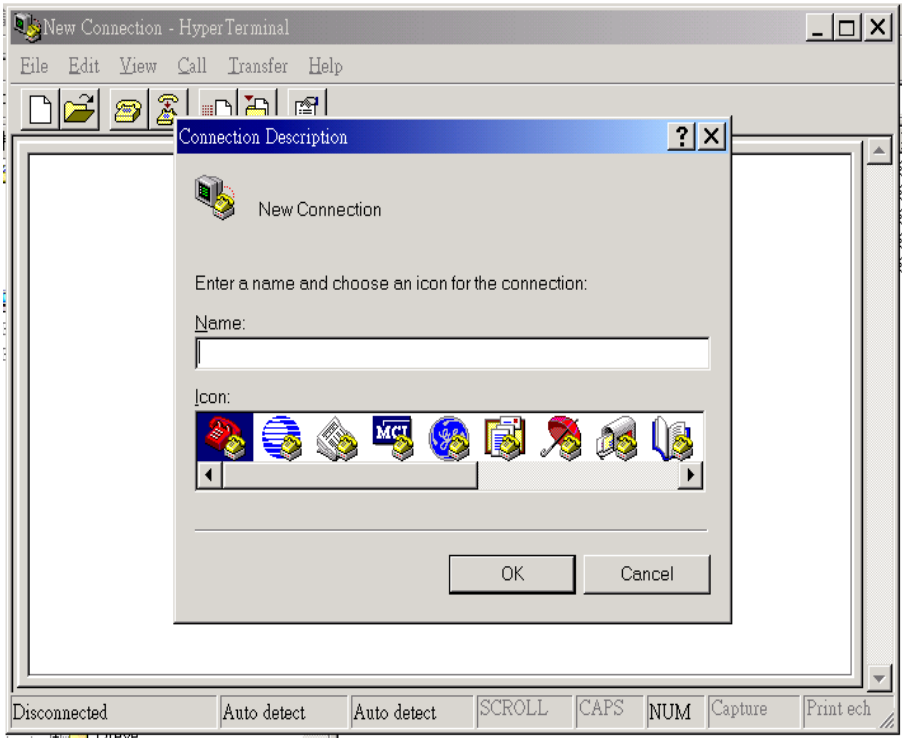
2.3 IP Environment Setting

User must prepare a valid IP address to be complied IP Network policy in order for WellGate 3804 operating correctly.

For example, if your company's IP address is 192.168.4.111, subnet mask is 255.255.0.0, default gateway is 192.168.1.254, you should prepare one IP for WellGate 3804, such as IP address is 192.168.4.99, and the same subnet mask and default gateway.

2.4 Hyper Terminal Setting

1. Execute the Hyper Terminal program, then the following windows pop-up on the screen. (START – Program files – Accessories – Communication – Hyper Terminal)

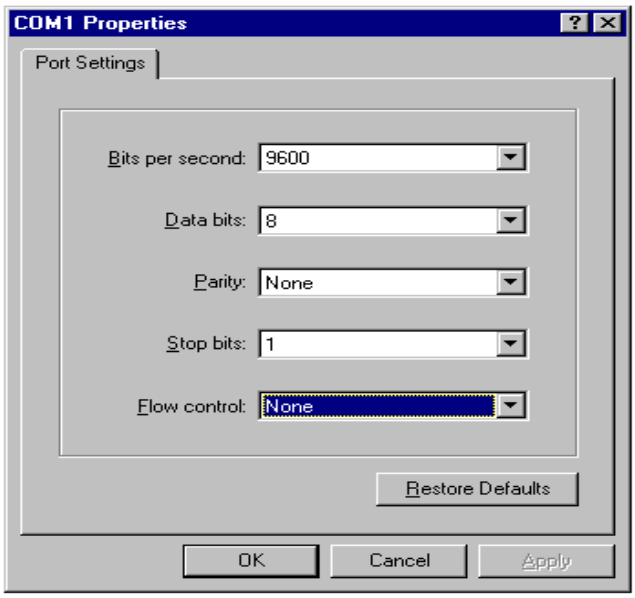


2. Define a name such as '3804 Gateway' for this new connection.

3. After pressing OK button, the next window popping up is necessary to connect choose COM Port.

Note: Some connection failed is derived the PC COM Port. If user cannot open the com port, for example com 1, please try another com port, com port 2.

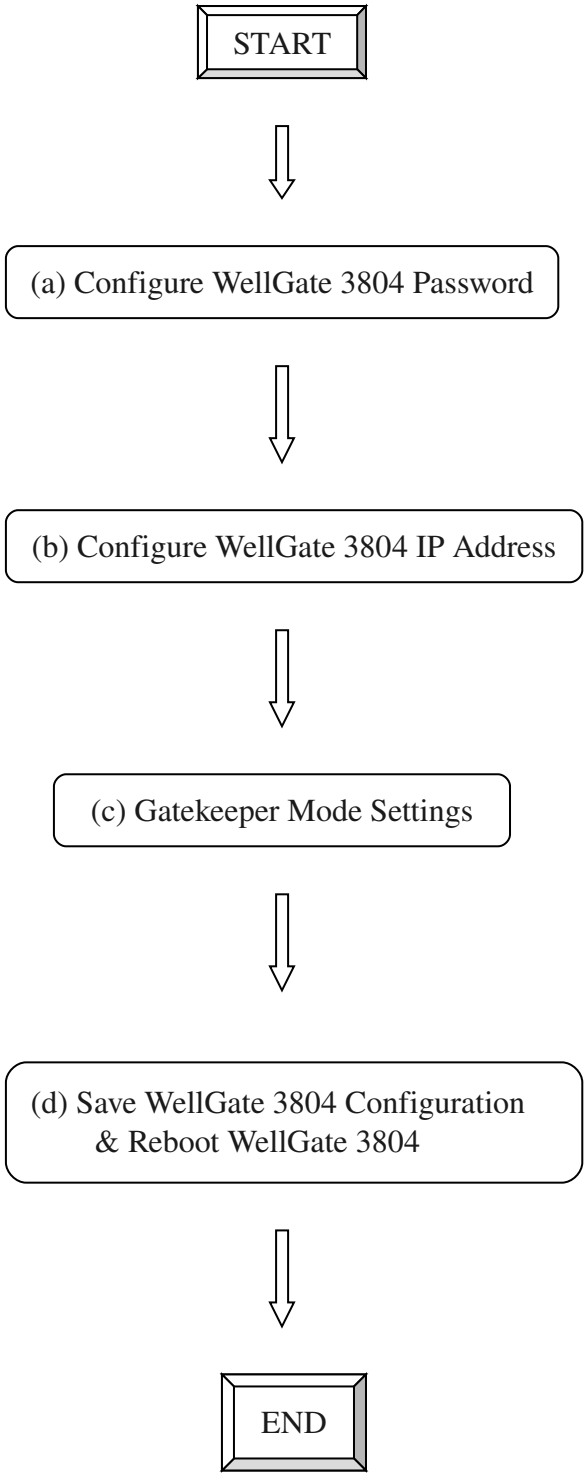
4. Configure the COM Port Properties as following:
   (1) Bits per second : 9600
   (2) Flow control : None



Press 'OK' button, and start to configure WellGate 3804.

3. Initializing WellGate 3804 Setting

3.1 Gatekeeper Mode


START
(a) Configure WellGate 3804 Password
(b) Configure WellGate 3804 IP Address
(c) Gatekeeper Mode Settings
(d) Save WellGate 3804 Configuration & Reboot WellGate 3804
END

(a) Configure WellGate 3804 Password

It is important for the first time user to follow the operation procedure.

1. Power on the WellGate 3804 and the sentence “Please wait while system is initializing……S” is displayed.

```
---------------------------------------------------------------------------------------
Attached TCP/IP interface to cpm unit 0
Attaching interface lo0...done


Please wait while system is initializing ..... S
```

2. Wait around 40 seconds, the login name and password are requested.

```
---------------------------------------------------------------------------------------
Attached TCP/IP interface to cpm unit 0
Attaching interface lo0...done
AC4804[0] is OK
AC4804[1] is OK
AC4804[2] is OK
Successful

 Initialize OSS libraries...OK!
open stack successful
cmInitialize succeed!
GK mode selected.

login:
```

3. Login: when WellGate 3804 is used for the first time, “root” is default login name without a password.

4. Password setting: type “passwd –set root ****” to define a password for “root” account. “****”, in above description, stands for contents of the password. An example, to set **root**’s password as **good**, is demonstrated as following:

```
---------------------------------------------------------------------------------------
usr/config$ passwd -set root good

Setting
login: root
Password: good
OK
```

(b) Configure WellGate 3804 IP Address

Use “**ifaddr**” command to set up WellGate 3804’s IP address and related network information. An example is demonstrated below:

```
usr/config$ ifaddr –ip 10.1.1.1 –mask 255.2555.255.0 –gate 10.1.1.254
```

Note: this is to assign WellGate 3804 an IP address of "10.1.1.1", subnet mask "255.255.255.0", and default IP gateway "10.1.1.254".

(c) Gatekeeper Mode Settings

To assign a gatekeeper address for WellGate 3804, and define its own registered ID and phone number. For detail, please refer to *Chapter 4.19 [h323] command*.

Several important H323 parameters is listed below when setting gatekeeper mode:

"**–gk**", "**–e164**", and "**–alias**".

An example is demonstrated below:

```
usr/config$ h323 –gk 10.2.2.2 –e164 –alias wg3804_xxx
```

Note: This is to set gatekeeper IP address as "10.2.2.2", e.164 number as "1", and alias name (h323ID) as "wg3804_xxx".

(d) Save WellGate 3804 Configuration & Reboot WellGate 3804

1. Confirming the values, type ***commit*** and press ***enter*** to save all the changes you have done.
2. Type ***reboot*** and press ***enter*** to reboot the WellGate 3804.
3. Wait for WellGate 3804 initializing in gatekeeper mode.

3.2 Peer to Peer Mode

Peer-to-Peer Mode allows users to call other VoIP devices without using a gatekeeper. When in Peer-To-Peer mode, WellGate 3804 will send SETUP message directly to the destination IP address once the dial is finished. Users have 2 methods of dial. One is IP dialing, and the other is Phonebook dial, which we will describe later. When using IP address as destination phone number, press "*" as "." in IP address expression, and press "#" when dial is finished. When using Phonebook, users can dial predefined phone number, and press "#" (optional, to accelerate the dial) as end of dial. Or, users can use SpeedDial button, which is mapping to user defined Phonebook, Button1 to PhonebookIndex1, Button2 to Phonebook Index2,…etc.

To configure Peer-To-Peer Mode in WellGate 3804, follow the steps below:

1. Set Peer-To-Peer Mode, using "h323" command

```
-----------------------------------------------------------------------------------------------
usr/config$ h323 –mode 1
```

Note: mode 1 is for Peer-To-Peer (non-gk) mode, while mode 0 is for GK mode.

2. Configure Phonebook, using "pbook" command.

Users can refer to chapter 5.11 [pbook] command for more information.

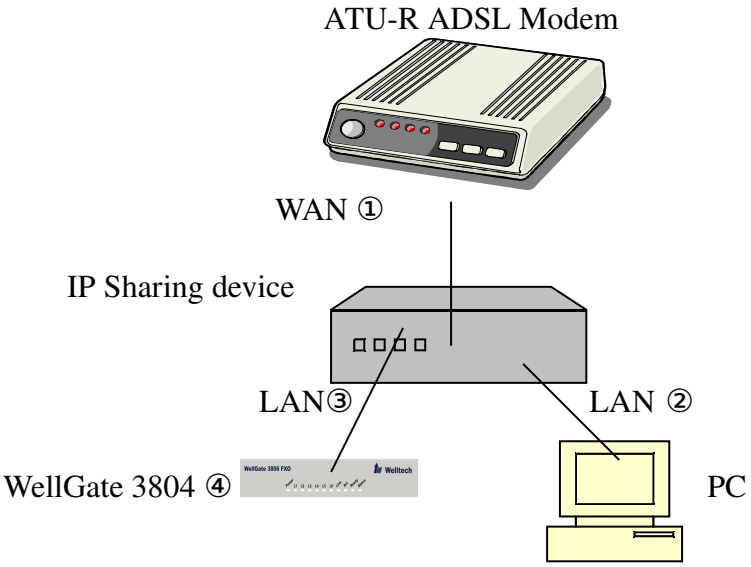
```
-----------------------------------------------------------------------------------------------
usr/config$ pbook –add name TEST1 ip 10.1.1.1 e164 10
```

Note: the command is to add a record onto Phonebook. After the command completed, you can type "pbook –print" to see if the input record is correct. When adding a record to Phonebook, users do not have to reboot the machine, and the record will be effective immediately.

3.3 Behind IP-Sharing

IP Sharing function

The function is for user whose network environment is behind IP Sharing device. It is said WellGate 3804 is connected to the IP Sharing device.
An example such as ADSL network is in the following.



① The WAN IP Address obtained from ADSL has two kinds of methods.
One is fixed IP Address, while user applies for one or more fixed IP Addresses.
Another is dynamic IP Address while user applies for dial-up connection way.

② The LAN IP Address of User's PC can be set as DHCP client in order to gain an valid one.

③ Anther IP Address for WellGate 3804 must be set as an fixed one in order for that IP Sharing device pass forwarding the relevant information from WAN to LAN. Besides, a valid IP Address which meets the IP Sharing device (LAN site) is the element.

④ WellGate 3804 must enable the IP Sharing function for the fixed / dynamic WAN IP Address.
Fixed IP Address – *usr/config$ ifaddr –ipsharing 1 210.11.22.33*
Dynamic IP Address –*usr/config$ ifaddr –ipsharing 1*

==========

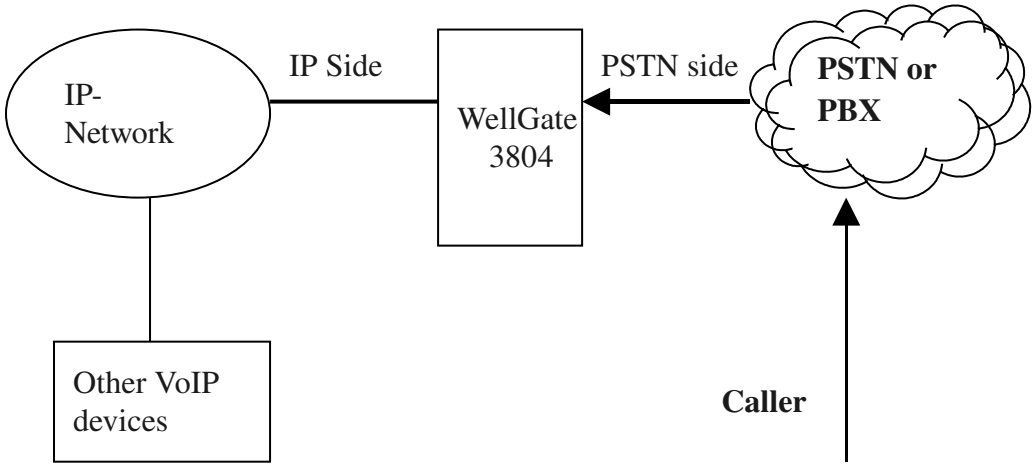
Please be noted
With Dynamic WAN IP Address, an valid Gatekeeper for WellGate 3804 to get register on it is a must. *In other word, it is not workable in Peer-to-Peer mode while dynamic WAN IP Address.*

⑤ IP Sharing device must have a function to do IP/Port mapping. Some is named as DMZ, some is named as virtual server. The VoIP messages from WAN have to completely pass forward to the LAN. It is said if the WellGate 3804 is assigned a virtual fixed IP Address such as 192.168.1.5, IP Sharing device must forward the VoIP messages to

4. Disconnect Tone Configuration

This application note is going to describe the procedures of configuring the disconnect tone on WellGate 3804 FXO gateway in order to release LINE ports of WellGate 3804 after PSTN/PBX caller party is hung up.

4.1 What is Disconnect Tone



A caller make a telephone call to Gateway from PSTN side, WellGate 3804 will answer the call automatically. If the IP side of other VoIP devices do not answer the call and the caller hang up the call, the PSTN/PBX will give Gateway a disconnect tone automatically. Or, both devices are installed with WellGate 3804 and connect to local PSTN. If both parties are in talk mode, one side hang up the call the WellGate has to recognize the disconnect tone from local PSTN. The WellGate 3804 gateway will recognize this disconnect tone and release the LINE port with the pre-defined busy tone or reorder tone from WellGate 3804 tone table.

If the other VoIP device of IP side hangs up the phone, the gateway will release the LINE port automatically without analyzing disconnect tone from PSTN/PBX.

There are three parameters received from PSTN/PBX.
- High level frequency and Low level frequency
- Tone Cadence (ON/OFF intervals)
- Tone level

These parameters have to be properly configured to WellGate 3804 in order to recognize disconnect tone correctly. Each different PSTN/PBX have different parameters. So, WellGate 3804 has to configure tone table when LINE port connect to different PSTN/PBX.

4.2 How to configure disconnect tone on WellGate 3804 gateway

WellGate 3804 has a default setting of disconnect tone (Busy tone 1, Busy tone 2, reorder tone 1 and reorder tone 2). If the disconnect tone was recognized correctly, the LINE port from PSTN/PBX will be released in two seconds. Otherwise it may be released after one minute or lock this LINE permanently.
The tone table parameters are shown as follows.

LowFreq 480 : Low frequency is 480 HZ
HighFreq 620 : High frequency is 620 HZ
LowFreqLevel 8 : Low frequency level received range from PSTN/PBX
HighFreqLevel 8 : High frequency level received range from PSTN/PBX
TOn1 50 : Disconnect tone cadence ON time is 0.5 seconds
TOff1 50 : Disconnect tone cadence OFF time is 0.5 seconds
(If this is continuous tone, the Toff has to set to 1023)
TOn2 1023 : Disconnect tone second cycle cadence ON time is OFF TOff2 1023 : Disconnect tone second cycle cadence OFF time is OFF
(If the tone cadence has only one cycle, the second cycle must set to 1023)

(1) Examples how to configure Tone table

a. 480/620 frequency with ON/OFF time is 0.5 seconds
tone -busy1 480 620 8 8 50 50 1023 1023

b. 480 HZ single frequency with continuous tone
tone –reorder2 480 0 8 0 50 1023 1023 1023

(2) There are two ways to analyze the disconnect tone.

a. The first one is using command “greetrd” from WellGate 3804. Once you follow the instruction to analyze the disconnect tone, Gateway will configure the tone table (Busy tone 1, Busy tone 2, reorder tone 1 and reorder tone 2) with proper frequency and default tone level and cadence (Ton1/Toff1) automatically. Or you may read the analysis tone frequency from command line and configure to one of tone table manually.

   The default tone level is set to 8. And the tone cadence (Ton1/Toff1) is set to four different values on tone table. They are 0.1 second, 0.25 seconds, 0.5 seconds and 0.75 seconds with parameters 10/10, 25/25, 50/50 and 75/75.

   If the PBX/PSTN cadence is not the value as default shown as above, you need to use the following instruction to analyze ON/OFF intervals.

b. You may use your PC (START Program Files Accessories Multimedia Recorder) with Headset or Microphone to record the disconnect tone via a telephone set from PSTN/PBX and save to a voice file. Then you can use

"CoolEdit Pro" software to analyze the frequency and ON/OFF time. Please visit http://www.cooledit.com to download demo version for analysis. You can use this program to analyze ON/OFF time and fill in to tone table.

4.3 Adjust Tone Table parameters manually

If the gateway still cannot release the LINE port in two seconds, try to adjust the frequency by 1 hz on tone table. For example, your analysis value is 620/480, take the following procedures.

620/479
620/480
620/481
621/479
621/480
621/481
619/479
619/480
619/481

If the LINE port of gateway was locked, please use "hangup 0" command to release LINE 1, "hanhup 3" to release LINE 4.

4.4 Adjust Input Tone Level

Sometimes the disconnect tone level is too low to detect by WG3804. You can increase input gain from the following command.

voice -volume input xx
commit
reboot

xy is the input gain parameters. The maximum number is 35. if the number is over 35, the echo may be happened. Once you increase input gain, the voice volume from PSTN to IP side is increased too.

5. Command lists

5.1 [help] command

Type **help** or **man** or **?** to list all the available command.

```
usr/config$ ?
help            help/man/? [command]
quit            quit/exit/close
debug           show debug message
reboot          reboot local machine
flash           clean configuration from flash rom
commit          commit flash rom data
ifaddr          internet address manipulation
time            show current time
ping            test that a remote host is reachable
greetrd         Greeting voice and Disconnect tone Record mode
pbook           Phonebook information and configuration
sysconf         System information manipulation
h323            H.323 information manipulation
voice           Voice information manipulation
gk              H.323 gatekeeper manipulation
tos             IP Packet ToS (Type of Service)values
tone            Setup of call progress tones
support         Special Voice function support manipulation
group           Grouping setting information and configuration
bureau          Bureau line information manipulation
prefix          Prefix information manipulation
rom             ROM file update
passwd          Password setting information and configuration

usage: help [command]
```

5.2 [quit] command

Type **quit** will quit the WellGate 3804 configuration mode. And turn back to login prompt.

```
usr/config$ quit
Disconnecting...
login:
```

Note: *It is recommended that type the "**quit**" command before you leave the console. If so, WellGate 3804 will ask password again when next user connects to console port.*

5.3 [debug] command

Open debug message will show up specific information while WellGate 3804 is in operation. After executing the debug command, it should execute command **debug -open** as well. One example is demonstrated below.

```
usr/config$ debug -add h323 vp
usr/config$ debug -open
```

Parameters Usage:

-status	Display the enabled debug flags.
-add	Add debug flag.
	-- h323 : h323 related information
	-- vp : voice related information
-delete	Remove specified debug flag.
-open	Start to show debug messages.
-close	Stop showing debug messages.

5.4 [reboot] command

After **commit** command, type **reboot** to reload WellGate 3804 in new configuration. The procedure is as below:

```
usr/config$ reboot
Attached TCP/IP interface to cpm unit 0
Attaching interface lo0...done
AC4804[0] is OK
AC4804[1] is OK
AC4804[2] is OK
Successful

Initialize OSS libraries...OK!
open stack successful
cmInitialize succeed!
GK mode selected.

login:
```

5.5 [flash] command

This command will clean the configuration stored in the flash rom and reboot WellGate 3804 in factory default setting.

Parameter Usage:

-clean clean all the user-defined value, and reboot WellGate 3804 in factory default mode.

Note: It is recommended that use "flash –clean" after application firmware id upgraded.

Warning: Once users execute **flash –clean,** all the configurations of WellGate 3804 will be cleaned. This can only be executed by user who log in with **root**

5.6 [commit] command

Save changes after configuring the WellGate 3804.

```
usr/config$ commit

This may take a few seconds, please wait....
Commit to flash memory ok!
usr/config$
```

*Note: Users should use **commit** to save modified value, or they will not be activated after system reboot.*

5.7 [ifaddr] command

Configure and display WellGate 3804 network information.

```
usr/config$ ifaddr

LAN information and configuration
Usage:
ifaddr [-print]|[-dhcp used]|[-sntp mode [server]]
ifaddr [-ipsharing used [deviceAddr]]
ifaddr [-ip ipaddress] [-mask subnetmask] [-gate defaultgateway]

   -print        Display LAN information and configuration.
   -ip      Specify WellGate 3804 ip address.
   -mask        Set Internet subnet mask.
   -gate        Specify default gateway ip address
   -dhcp        Set DHCP client service flag (On/Off).
   -sntp        Set SNTP server mode and specify IP address.
   -timezone  Set local timezone.
    -cmcenter        Set Management Center IP Address.
   -ipsharing  Specify usage of an IP sharing device and specify IP address.
Note:
   Range of ip address setting (0.0.0.0 ~ 255.255.255.255).
   DHCP client setting value (On=1, Off=0). If DHCP set to 'On',
   Obtain a set of Internet configuration from DHCP server assigned.
   SNTP mode (0=no update, 1=specify server IP, 2=broadcast mode).
Example:
   ifaddr -ip 210.59.163.202 -mask 255.255.255.0 -gate 210.59.163.254
   ifaddr -dhcp 1
   ifaddr -sntp 1 210.59.163.254
   ifaddr -ipsharing 1 210.59.163.254
   ifaddr -timezone 8
```

Parameters Usage:

-print print current IP setting
-ip assigned IP address for WellGate 3804
-mask internet subnet mask
-gate IP default gateway
-dhcp Dynamic Host Configuration (1 = ON; 0 = OFF)
-sntp Simple Network Time Protocol (1 = ON; 0 = OFF) When SNTP function is activated, users have to specify a SNTP server as network time source. An example is demonstrated below:

```
usr/config$ ifaddr -sntp 1 10.1.1.1
```

while 10.1.1.1 stands for SNTP server's IP address.

-timezone Set timezone for WellGate 3804. User can set different time zone according to the location WellGate 3804 is. For example, in Taiwan the time zone should be set as 8,which means GMT+8.

-cmcenter Set management center IP address. IF user specifies management center IP address, WellGate 3804 will send information to management center, let user can easily configure via management center interface. (sysconf –cmcenter "IP address of management center")

Note: management center is optional software to help user can easily configure WellTech products, please contact your reseller to know more about it.

-ipsharing Specify usage of an IP sharing device and specify IP address. If WellGate 3804 is behind a IP-sharing , user can enable IP sharing function and specify public IP address of IP-sharing.

5.8 [time] command

When SNTP function of WellGate 3804 is enabled and SNTP server can be found as well, type **time** command to show current network time.

```
usr/config$ time
Current time is THU JAN 01 05:29:23 1970
```

5.9 [ping] command

Use **ping** to test whether a specific IP is reachable or not.
For example: if 192.168.1.2 is not existing while 210.63.15.32 exists. Users will have the following results:

```
usr/config$ ping 210.54.23.129
PING 210.54.23.129: 56 data bytes
no answer from 210.54.23.129
usr/config$ ping 192.168.4.121
PING 192.168.4.121: 56 data bytes
64 bytes from 192.168.4.121: icmp_seq=0. time=5. ms
64 bytes from 192.168.4.121: icmp_seq=1. time=0. ms
64 bytes from 192.168.4.121: icmp_seq=2. time=0. ms
64 bytes from 192.168.4.121: icmp_seq=3. time=0. ms
----192.168.4.121 PING Statistics----
4 packets transmitted, 4 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/1/5
```

5.10 [greetrd] command

This command is for user to record their own greeting and analyze disconnect tone. If WellGate 3804 can't hang up call and release line correctly, please

use this function to analyze disconnect tone of PSTN side.

1. **Greeting Voice Record :** please follow instructions on screen ; first, call in line1 of WellGate 3804 from PSTN side(now can't hear greeting) and press "enter" to start record .After finishing recording, please press "enter" again to stop recording. Then choose "y/n" to replay and save or not.

```
-------------------------------------------------------------------------------------------
---------------
usr/config$ greetrd

================================================
=
     Welcome to Voice Record/Analysis Mode
-------------------------------------------------
1.Greeting Voice Record.
2.Disconnect Tone Analysis.
3.exit.
-------------------------------------------------
Please input function(1~3): 1

1.Greeting Voice Record.

Please Dial-in "Line 1" and press "Enter" to start record!!!

Press "Enter" to stop record!!!
Starting record...

Stoped record!!!

                New Greeting Voice Infomation
             ---------------------------------------

              File size   :     0 (K bytes)
              Totally time:      8 (seconds)

Do not Hang up the phone!!
Please wait for Writing...block 0
Please wait for Writing...block 1
Please wait for Writing...block 2

Replay New Greeting Voice?(y/n):
```

2. **Disconnect Tone Analysis :** please follow instructions on screen ; first call in line1 of WellGate 3804 from PSTN side(now can't hear greeting), hang up the phone and press "enter" to start record disconnect tone. Finally, choose "y/n" to save data analyzed or not. Notice that system will save one set of frequency analyzed and 4 set different on/off time in "busytone1","busytone2" ,"reordertone1" , "reordertone2" (Please refer to tone command) .

   If WellGate 3804 still can't hang up call correctly, it could be tone cadence issue (on/off time). Please count on/off time and configure it into tone command.

```
-------------------------------------------------------------------------------------------
---------------
usr/config$ greetrd
```

```
================================================
    Welcome to Voice Record/Analysis Mode
------------------------------------------------
1.Greeting Voice Record.
2.Disconnect Tone Analysis.
3.exit.
------------------------------------------------
Please input function(1~3): 2

2.Disconnect Tone Analysis.

Please Dial-in "Line 1" and then Hang up the phone!!!
Press "Enter" to start record!!!

Waiting for Disconnect Tone from PSTN....
Disconnect Tone Detected....
Starting Record...

Set parameters to flash? (Y/N)
```

3. **exit :** exit this command

```
-------------------------------------------------------------------------------------------
--------------
usr/config$ greetrd

================================================
    Welcome to Voice Record/Analysis Mode
------------------------------------------------
1.Greeting Voice Record.
2.Disconnect Tone Analysis.
3.exit.
------------------------------------------------
Please input function(1~3): 3

Are you sure to EXIT?!(y/n): y

usr/config$
```

5.11 [pbook] command

Phone Book function allows users to define their own numbers, which mapping to real IP address. It is effective only in peer-to-peer mode. When adding a record to Phone Book, users do not have to reboot the machine, and the record will be effective immediately.

```
-------------------------------------------------------------------------------------------
usr/config$ pbook
Phonebook information and configuration
Usage:
pbook [-print [start_record] [end_record]]
pbook [-add [ip ipaddress] [name Alias] [e164 phonenumber]]
```

```
pbook [-search [ip ipaddress] [name Alias] [e164 phonenumber]]
pbook [-insert [index] [ip ipaddress] [name Alias] [e164 phonenumber]]
pbook [-delete index]
pbook [-modify [index] [ip ipaddress] [name Alias] [e164 phonenumber]]
   -print      Display Phonebook data.
   -add        Add an record to Phonebook.
   -search     Search an record in Phonebook.
   -delete          Delete an record from Phonebook.
   -insert     Insert an record to Phonebook in specified position.
   -modify     Modify an exist record.
Note:
   If parameter 'end_record' is omited, only record 'start_record' will be display.
   If  both parameters 'end_record' and 'start_record' are omited, all records will
be display.
   Range of ip address setting (0.0.0.0 ~ 255.255.255.255).
   Range of index setting value (1~100),
Example:
   pbook -print 1 10
   pbook -print 1
   pbook -print
   pbook -add name Test ip 210.59.163.202 e164 1001
   pbook -insert 3 name Test ip 210.59.163.202 e164 1001
   pbook -delete 3
   pbook -search ip 192.168.4.99
   pbook -modify 3 name Test ip 210.59.163.202 e164 1001
```

Parameter Usages:

-print print out current contents of Phone Book. Users can also add *index number*, from 1 to 100, to the parameter to show specific phone number.

Note: <index number> means the sequence number in phone book. If users do request a specific index number in phone book, WellGate 3804 will give each record a automatic sequence number as index.

-add add a new record to phone book. When adding a record, users have to specify ***name***, ***ip***, and ***e164*** number to complete the command.

-search search a record in phone book. The searching criteria can be ***name***, ***ip***, or ***e164***.

-delete delete a specific record. “pbook –delete 3” means delete **index 3** record.

-insert add a new record and force to assign a specific index number for it.

-modify modify an existing record. When using this command, users have to specify the record’s index number, and then make the change.

Phonebook Rules:

To meet the requirements of communicating with trunk gateway or other applications, Phonebook has following characteristics to be noticed.

When the destination side is a terminal, for ex: IP Phone or soft phone, e164 number stands for exact destination phone number.

When the destination side is a gateway, for ex: T1/E1 gateway, e164 phone number stands only for gateway prefix. That is to say, users have to continue to dial destination number, following the prefix number. A example is as below:

A WellGate 3804

In Phonebook, there’s a record :

Index	Name	IP	E164
1	B_gateway	192.168.1.2	0

B 为 E1 trunk gateway, which connects to PSTN with E1 PRI.

If users want to make a call to PSTN number "82265699", they have to pickup one of the phone connected to WellGate 3804, and then dial "082265699". After receiving the complete dialed number, WellGate 3804 will search for its Phone Book, find "0" as matched prefix, and then dial out to B's IP address directly with destination e.164 (phone number) "82265699". Pleased be noted that "0" is eliminated from WellGate 3804 itself.

Note:1. Because of above characteristics, users have to take care of the number plan very well to avoid the numbering conflict. If users already defined "0" for specific trunk gateway, other terminal started with "0" shall be avoided, or the number will be routed to the trunk gateway defined "0".

2. If user wants to set 2 sets of similar e164 such as 123 and 1234, please be careful configure 123 first, or it may cause problem when user dial 1234, WellGate 3804 may dials out IP address of 123.

3.

(1) If called party is FXO product, please set e164 of pbook as e.164 of called party, and remember to set sysconf –drule in_drop "e.164"(refer to 5.12.)in called party.

(2) If called party is FXS product, please set e164 of pbook as prefix of called party, when dialing to different line of FXS product, please dial line number.

5.12 [sysconf] command

This command displays the system information and configuration.

```
usr/config$ sysconf

System information and configuration
Usage:
sysconf [-service type] [-plan digits] [-2nddial flag]
      [-keypad dtmf] [-ringdet method] [-callalive flag]
      [-port s1 s2 s3 s4 ]
      [-seizure mode] [-2nddial switch]
      [-drule [in_filter str1] [in_drop str2] [in_insert str3]
            [out_filter str4] [out_drop str5] [out_insert str6]]
      [-askpin f] [-pincode [set1 pin1] [set2 pin2] [set3 pin3] [set4 pin4]]
sysconf -print

   -print       Display system overall information and configuration.
   -service     Specify gateway service type.
                 (0: Dial in service,2: HotLine/LineToLine  service.)
   -ringdet     Specify gateway ring detect method. (0:For 1st hardware version,
            1:For 2st hardware version.
   -plan        Number of digits for dial plan. (any positive
            number.)
   -port        Enable/Disable individual port.
   -seizure     Choose line seizure mode (None/UCD).
   -2nddial     Config GW to accept 2nd dtmf set.  In this mode, device
```

```
            from IP side needs to dial GW's E164, wait for PSTN
            dialtone, and then dial out.
    -drule      Specify digits to be filtered/dropped/inserted before
            making an outgoing IP call or after receving an incoming
            IP call.
    -askpin     PIN code prompt before greeting.
            0:Disable 1:Per Unit 2:Per Channel.
    -ring       Ring number before answer.
            0:Disable, other is number of ring ( 1 ~ 5 ).
    -callalive  Enable or disable auto-disconnection after 10 seconds
    -keypad     DTMF setting: 0=In-band, 1=H.245 Alphanumeric,
            2=H.245 SignalType, 3=Q.931 UserInfo.
    -pincode    Specify 6 sets of PIN codes.
    -sendxcode      Send access code after connection.
            0:Disable 1:Enable.
    -access     Specify access codes.
Note:
    Use character 'x' to delete the drule parameter.
    For line seizure 0: None, 1: UCD.
    For askpin: f=0: No, f=1: Yes.
    Hotline feature should be used together with:
        $sysconf -2nddial 0 (2nddial off)
        $h323    -mode    1 (peer-to-peer mode)
        $bureau  -print   for Hotline/LineToLine table configuration.
    LineToLine feature should be used together with:
        $sysconf -2nddial 1 (2nddial on)
        $h323    -mode    1 (peer-to-peer mode)
        $bureau  -print   for Hotline/LineToLine table configuration.
Example:
    sysconf -service 0 -plan 4 -port 1 1 1 1 0 0
    sysconf -callalive 0 -keypad 0
    sysconf -2nddial 0 -drule out_filter 002 in_insert x in_drop 1
    sysconf -askpin 1 -pincode set1 12345
    sysconf -sendxcode 1 -access set1 12345#
```

- service:

0 Dial In Service

in Dial In Service, Wellate3804 will pick up incoming calls from PSTN, play pre-recorded voice greeting or, and then have users to make a 2nd dial to destination.

2 HotLine/ LineToLine Service (this feature must be implemented in a pair of FXO products in P2P mode and set bureau –table command)

HotLine Service provides Hot Line function, which connects directly to pre-defined destination. For ex: if L1 of WellGate 3804 is assigned to destination address 192.168.1.12 in Hot Line Mode. When users from PSTN make a call to L1 of WellGate 3804, it will directly connect to 192.168.1.12 without a 2nd dial.

Note: In hotline service, must set WellGate 3804 sysconf –2nddial 0 .

LineToLine Service is like HotLine Service, but ask for a specific line number. For ex: if L1 of WellGate 3804 is assigned to destination address 192.168.1.12 /Line4 in LineToLine Mode. When users from PSTN make a call to L1 of WellGate 3804, it will directly connect to 192.168.1.12 and choose Line4 to call out to PSTN. This is mostly

applied to ITSP, who provides international VoIP solution.

Note: In LineToLine service, must set WellGate 3804 sysconf –2nddial 1 .

- ringdet: to define ring detection method. (0 is for old hardware version; 1 for new hardware version)
- plan: It is for setting dial-numbering plan. While e164 number is three digits, the plan should be set as 3 or 0. The plan 0 is for any positive digits use.
- port: This command can enable or disable individual port. The default value is set to enable all ports.
- seizure: line seizure mode.

  None (0) ： when calling from IP side, choose L1 every time if it is available.

  UCD (1) ： when calls from IP side, choose L1 for the first time, and L2 for the 2nd time, (cyclic)

Note: Do not enable this function together with **group** (please refer to 5.18).

- 2nddial: This command is necessary for setting one time dial method use. While user would like to skip 2nddial process, WellGate 3804 must close 2nddial and set as 0 (2nddial off). The default value is set as 1 (2nddial on).
- drule: This command only works while 2nddial is off. When user would like to make an outgoing call or receive an incoming call shortly, it is necessary to set the following three commands belonged to drule.
  - ●drop: drop the dial digit.
  - ●insert: insert the dial digit
  - ●filter: filter the dial digit.

Note:

1. out: Through WellGate 3804 to dial out to another Gateway's e164 number. When making an outgoing call, it is necessary to set three commands in order, filter, insert then drop.
   Example: sysconf –drule out_filter 002886 out_insert 0 out_drop 02
2. in: Through pass WellGate 3804 in order to connect with PSTN / PBX side. When making an incoming call from other Gateway, the three commands is necessary to be set in order, drop, insert, then filter.
   Example: sysconf –drule in_drop 002886 in_insert 0 in_filter 02
3. 3. While the specified digit would like to be deleted, use the character x instead of any digits have configured.

-askpin:

0 ： disables ASKPIN function

1 ： enables ASKPIN function, and apply to the whole unit. Every channel uses the same PINCODE.

2. ： enables ASKPIN function, and apply to each channel

respectively. Every channel uses a different pincode.

-ring: To set when dial in WellGate 3804 from PSTN side, WellGate 3804 will pick the call immediately or rings for specific times before picks up.

0 disable: pick up immediately

1-5 times of ring before WellGate 3804 picks up.

- callalive: Call Alive function (1 = ON; 0 = OFF). The function is used to check if the opposite party is alive when connection is established. When CallAlive is activated, WellGate 3804 will send H.245 RoundTripDelay message to other party, and wait for response. If the other party cannot respond the message in 10 seconds, WellGate 3804 will regard the opposite party as IDLE state and disconnect the call. When CallAlive is deactivated, RoundTripDelay message will not be sent during connection.

- keypad: keypad type when relay DTMF signal.

0 In-Band

1 h.245 alphanumeric

2 h.245 signal type

3 q.931 user info

- pincode: to specify 2 sets of pincode.

-sendxcode: send access code after connection (1 = ON; 0 = OFF)

-access: specify access codes (per port basis) .

Note:

1. This feature can only implement with LineToLine service. Please refer to –service above.
2. This function can help users to restrict callers to dial particular numbers from IP side to PSTN side. For example, if user set sysconf –access set1 1111, when callers call from IP side and enter WellGate 3804 port 1, if user dial 234 after hearing dial tone, WellGate will dial out 1111234.

---

usr/config$ sysconf –sendxcode 1 –access set1 1111

5.13 [h323] command

This command is to configure H.323 related parameters.

---

usr/config$ h323
H.323 stack information and configuration
Usage:
h323
h323 [-gk ipaddress] [-multicast used] [-e164 number] [-alias h323id]
[-rtp port] [-h245 port] [-ttl time] [-gkfind port] [-ras port]
[-range [start num1] [end num2]]
h323 -print
-print Display H.323 stack information and configuration.
-mode Configure as Gatekeeper mode or Peer-to-Peer mode.
-gk Gatekeeper ip address. (0.0.0.0 ~ 255.255.255.255)
-dfgw Default Gateway ip address. (0.0.0.0 ~ 255.255.255.255)

-e164 IP side registered number (phone number).
-alias IP side registered H.323 alias (account name).
-multi Gatekeeper auto discovery (multicast, On=1, Off=0).
-rtp RTP port number (1024~65532).
-h245 H.245 port number (N/A).
-ttl RAS TTL time (0~3600 second).
-gkfind Gatekeeper finding port (1024~65535).
-gwtype Register as Gateway (1) or Terminal (0) type
-ras Gatekeeper RAS port (1024~65535).
-range Dynamically allocated port range (1500~65535).
-respto Max waiting time for 1st response to a new call (1~200).
-connto Max waiting time for call establishment after receiving 1st response of a new call (1~20000).

Note:
H.245 port configuration is not available now.
Options -gk -e164 -alias -multi -ttl -gkfind -ras are ignored when RAS mode is configured as Peer-to-Peer mode.

Example:
h323 -gk 210.59.163.171 -e164 0 -alias wg3804
h323 -mode 1

Parameters Usage:

-print print current h323 related settings

-mode alternatives for gatekeeper or peer-to-peer mode (0=gatekeeper mode; 1=peer-to-peer mode). If users select gatekeeper mode, a extra gatekeeper is need when WellGate 3804 is in operation.

-gk to assign gatekeeper's IP address when WellGate 3804 is in gatekeeper mode.

-dfgw to set IP address of default gateway, this function is the same as Microsoft NetMeeting.

A. To implement this feature both endpoints must be under peer-to-peer mode.

B. If the other endpoint is FXO products, such as WellGate 38xx, which Have to set as **sysconf –2nddial 0** to make one-stage dialing.

- From PSTN side dial in WellGate 3804,when hearing greeting user can dial remote PSTN number under default gateway, WellGate 3804 will automatically dial to default gateway, then default gateway will dial this number to PSTN side.
- For example, user wants to dial from WellGate 3804 A to ext.888 under WellGate 3804 B, user only have to dial 888 after hearing greeting of WellGate 3804 .

C. If the other endpoint is FXS products such as WellGate 35xx : From PSTN side dial in WellGate 3804, when hearing greeting user can dial line number of WellGate 35xx.

- For example ,user wants to dial from WellGate 3804 to WellGate 3502，the configuration of 3502 is **h323 –line1 101 –line2 102**，user can press 101 or 102 dialing to line1 or line2 of WellGate 3502 after hearing greeting of WellGate 3804.

-e164 e164 number, which is registered as phone number in gatekeeper.

alias —h323 ID, a identification in h323 world for other parties' recognition. The field might be used as a key of authorization or accounting in some VoIP application. It is recommended to assign a special name, or it might conflict with other devices.

-multi Switch ON or OFF gatekeeper discovery function (1 = ON; 0 = OFF). When it's ON, WellGate 3804 will multicast for gatekeeper if default gatekeeper is not presented.

-rtp to allocate RTP port range—NOT RECOMMENDED. This may be used when RTP port range conflicts with Firewall policy.

-h245 to assign h.245 port number, NOT AVAILABLE for the moment.

-ttl to set timer for TTL(Time To Live). WellGate 3804 would send RRQ, with keepAlive, to gatekeeper periodically according to TTL timer.

-gkfind gatekeeper finding port. Port number, which WellGate 3804 uses it to discover a gatekeeper. Default value is 1718.

-gwtype to set WellGate 3804 register mode as terminal or gateway,0 as terminal 1 as gateway. Please notice that if set WellGate 3804 as terminal mode, must set sysconf –2nddial 1(refer to 5.12).

-rasto set default gatekeeper RAS port number. Default value, 1719, is well-known port for RAS communication.

-range to allocate dynamic port range, which WellGate 3804 might be using.

-respto response timeout. Max waiting time for 1st response to a new call (1~200).

-connto connection timeout. Max waiting time for call establishment after receiving 1st response of a new call (1~20000).

5.14 [gk] command

This command is to configure embedded simple gatekeeper related parameters. If user doesn't have a gatekeeper or WellTech Call Manager, WellGate 3804 provide a simple embedded gatekeeper for up to 10 endpoints.

```
usr/config$ gk

Gatekeeper information and configuration
Usage:
gk [-add type1 [[type2]...]] [-delete h323] [-ttl value
  [-enable 0/1] [-security enable/disable]

   -print              Display the enabled debug flags.
   -enable             Enable simple gatekeeper
   -ttl           Set TTL value
   -add                 Add dynamic endpoint
                   (h323 ID, E164, IP, port, type)
   -delete           Delete dynamic endpoint
   -security enable   Enable security check
   -security disable   Disable security check
   -security add      Add security record
   -security delete    Delete security record
Example:
   gk -add h323 256 192.168.1.1 1720 0
   gk -delete h323
   gk -security delete  h323
```

gk -security add h323

Parameters Usage:

-print print current embedded gatekeeper information and configurations.

-enable to enable gatekeeper feature(gk –enable 0/1)

-ttl to set timer for TTL(Time To Live).In this period of time if endpoint doesn't send RRQ to GK,GK will determine this endpoint as not exist anymore and delete it from registered list.

-add To add a dynamic endpoint that doesn't send RRQ to GK. User can predefine an endpoint in GK, and GK will determine this endpoint has already registered to GK, though it doesn't send register request to GK.
(gk –add "H.323 ID" "e164" "IP address" "signaling port" "gateway type,0=terminal,1=gateway" ; ex. gk –add test 123 10.1.1.1 1720 0)

-delete To delete dynamic endpoint which user added formerly. (gk –delete "H.323 ID")

-security enable To enable security check. If this function is enabled, GK will only accept registration request from endpoints, which are added with gk –security add command.

-security disable To disable security check.

-security add To add endpoints to register to GK which enable security check. (gk –security add "H.323 ID")

-security delete To delete endpoints that added formerly in security check list.(gk –security delete "H.323 ID")

5.15 [voice] command

The voice command is associated with the audio setting information.
There are four voice codecs (g.729a optional) supported by WellGate 3804.

```
usr/config$ voice
Voice codec setting information and configuration
Usage:
voice [-send [G723 ms] [G711A ms] [G711U ms] [G729A ms] ]
     [-volume [voice level] [input level] [dtmf level]] [-nscng G723 used]
     [-echo used] [-mindelay t1] [-maxdelay t2] [-optfactor f]
voice -print
voice -priority [G723] [G711A] [G711U] [G729A]
   -print     Display voice codec information and configuration.
   -send      Specify sending packet size.
              G.723  (30/60 ms)
              G.711A (20/40/60 ms)
              G.711U (20/40/60 ms)
              G.729A (20/40/60 ms)
   -priority  Priority preference of installed codecs.
              G.723
              G.711A
              G.711U
              G.729A
   -volume   Specify the following levels:
              voice volume (0~63, default: 28),
              input gain (0~63, default: 28),
              dtmf  volume (0~31, default: 23),
```

-nscng No sound compression and CNG. (G.723.1 only, On=1, Off=0).
-echo Setting of echo canceller. (On=1, Off=0, per port basis).
-mindelay Setting of jitter buffer min delay. (0~150, default: 100).
-maxdelay Setting of jitter buffer max delay. (0~150, default: 150).
Example:
voice -send g723 60 g711a 60 g711u 60 g729a 60
voice -volume voice 20 input 32 dtmf 27
voice -echo 1 1

Parameters Usage:

-print print current voice information and configurations.

-send to define packet size for each codec. 20/40/60ms means to send a voice packet per 20/40/60 milliseconds. The smaller the packet size, the shorter the delay time. If network is in good condition, smaller sending packet size is recommended. In this parameter, 20/40/60ms is applicable to G.711u/a law, and G.729a codec, while 30/60ms is applicable to G.723.1 codec.

-priority codec priority while negotiating with other h323 device. This parameter determines the listed sequence in h.245 TCS message. The codec listed in left side has the highest priority when both parties determining final codec.

-volume There are three adjustable value. **voice volume** stands for volume, which can be heard from WellGate 3804 side; **input gain** stands for volume, which the opposite party hears. **dtmf** volume stands for DTMF volume/level, which sends to its own Line1 or Line2.

-nscng silence suppression and comfort noise generation setting (1 = ON; 0 = OFF). It is applicable to G.723 codec only. An example is demonstrated below:

---

usr/config$ voice -nscng g723 1

-mindelay the minimum jitter buffer size. (Default value= 90 ms)

-maxdelay the minimum jitter buffer size. (Default value= 150 ms)

---

usr/config$ voice –mindelay 90 –maxdelay 150 -optfacor 7

-echo activate each canceller (1 = ON; 0 = OFF).

*Note: be sure to know well the application before you change **voice** parameters because this might cause incompatibility.*

5.16 [tos] command

TOS service allows users to achieve QoS on IP network.

---

usr/config$ tos

IP Packet ToS(type of Service)information and configuration
Usage:
tos [-rtptype precedence]

```
   [-rtpdelay mode]
   [-rtpthruput mode]
   [-rtpreliab mode]
tos -print
   [-sigtype]|[-rtptype]|[-rtcptype]          0 routine.
                                              1 priority.
                                              2 immediate.
                                              3 flash.
                                              4 flash override.
                                              5 critic.
                                              6 internet control.
                                              7 network control.
   [-sigdelay]|[-rtpdelay]|[-rtcpdelay]       0 normal delay.
                                              1 low delay.
   [-sigthruput]|[-rtpthruput]|[-rtcpthruput]  0 normal throughput.
                                              1 high  throughput.
   [-sigreliab]|[-rtpreliab]|[-rtcpreliab]    0 normal reliability.
                                              1 high  reliability.
Example:
   tos -rtptype 7 -rtpdelay 0 -rtpthruput 0 -rtpreliab 0
```

Parameter Usages:

-print : display current TOS values configurations.

-sigtype configure TOS type of signaling packets from 0 to 7

-rtptype configure TOS type of RTP packets from 0 to 7

-rtcptype configure TOS type of RTCP packets from 0 to 7

-sigdelay configure signaling packets as normal delay or low delay

-rtpdelay configure RTP packets as normal delay or low delay

-rtcpdelay configure RTCP packets as normal delay or low delay

-sigthruput configure signaling packets as normal throughput or high throughput

-rtpthruput configure RTP packets as normal throughput or high throughput

-rtcpthruput configure RTCP packets as normal throughput or high throughput

-sigreliab configure signaling packets as normal reliability or high reliability

-rtpreliab configure RTP packets as normal reliability or high reliability

-rtcpreliab configure RTCP packets as normal reliability or high reliability

Note: Users should be aware that TOS is effective only when network devices (for ex: router, switch.. etc.) support TOS.

5.17 [tone] command

Tone detection of WellGate 3804 is configurable if the bureau line is connected to PABX or PSTN. Users can refer to "**greetrd**" command for tone recording and analysis. Sometimes the frequencies might shift from standard level. In such a situation, users have to adjust the tone value manually using this command.

```
usr/config$ tone

Setup of call progress tones
Usage:
tone -toneX LowFreq HighFreq LowFreqLevel HighFreqLevel TOn1 TOff1 TOn2
TOff2
tone -print
Note:
   toneX has the following possibility:
   busy1 busy2 reorder1 reorder2 ringtone1 ringtone2 dialtone
Example:
   tone -busy1 400 0 8 0 50 50 0 0
   tone -dialtone 400 0 19 0 25 25 0 0
```

5.18 [support] command

This command provides some extra functions that might be needed by users.

```
---------------------------------------------------------------------------------------------
usr/config$ support

Special Voice function support manipulation
Usage:
support[-tunnel enable]
support -print

   -t38         T.38(FAX) enabled/disabled.
   -fstart      Fast start enabled/disabled.
   -tunnel           H245 Tunneling enabled/disabled.
   -h245fs      H245 separate channel after faststart.
Example:
   support  -fstart 1
   support  -tunnel 0
   support  -h245fs 1
```

Parameter Usages:

-print print current setting in **support** command.

-t38to switch ON/OFF (1 = ON; 0 = OFF) T.38 function.T.38 function is for FAX. If user will use FAX machines, please switch on T.38 function.

-fstart to switch ON/OFF (1 = ON; 0 = OFF) FastStart function. Fast Start function can shorten the connection time if the opposite party also support FastStart.

-tunnel to switch ON/OFF (1 = ON; 0 = OFF) H.245 tunneling function. If the function is ON, WellGate 3804 will send H.245 (Call Control messages) via H.225's (Call Signal messages) link. The function is effective only when both side support h245 tunnel.

-h245fs to set if open H.245 separate channel after fast start or not. (1 = ON; 0 = OFF)

Note:

1. *it is not recommended to change the value in this command, only if users*

do know well the application. This might cause incompatibility with other devices.

2. *If user wants to use T.38 fax under fast start mode, please make sure "h245fs" function is enabled, or fax can't work normally.*

5.19 [group] command

This command is for grouping 4 ports of WellGate 3804. If users need to register at least 2 numbers (at most 4) separately to gatekeeper, then this command is needed for such an application.

```
usr/config$ group

PSTN side grouping information and configuration
Usage:
  group -print | -enable | -disable |
        -number group_number -pattern pattern_numbers -e164 e164_numbers |
        -pattern pattern_numbers -e164 e164_numbers |
        -e164 e164_numbers

Comment:
  -print          : Print current group configuration
  -enable         : Enable PSTN Grouping
  -disable              : Disable PSTN Grouping
  -number               : Set number of divided groups
  -pattern              : Set number of members in each group
  -e164           : Set E.164 number for each group

Example:
  group -print
  group -enable
  group -disable
  group -number 2 -pattern 3 3 -e164 01 02
  group -pattern 3 1 -e164 100 200
  group -e164 11 22
```

Parameter Usages:
- print : display current grouping information
- enable : enable grouping function
- disable : disable grouping function
- number : set how many groups will be divided
- pattern : set how many members in each group
- e164 : set e164 of each group

For ex: if users need to divide WellGate 3804 into 2 groups (L1 in the 1st group, and L2 in the 2nd group), and have them register to gatekeeper separately (e164=100 for 1st group; e164=200 for 2nd group). They have to use the following command:

```
usr/config$ group –pattern 1 3 –e164 100 200
```

Note: GROUP function is effective only in gatekeeper mode.

5.20 [bureau] command

Type **bureau** to display the command usage.

```
---------------------------------------------------------------------------------------------
usr/config$ bureau

Bureau line setting information and configuration
Usage:
bureau [-pstn number] [-hold used] [-table [Port DestIP TELnum]]
bureau -print

   -print       Display Bureau line informatio and configuration.
   -pstn        PSTN number (per port basis). This number is used to display
                as a caller ID when the caller ID is not available.
               The maximum digit length is 32.
   -hold        Specify the hold tone generation (using PCM file). (On/Off)
               Setting value (On=1, Off=0).
   -table       Set Hot line/Line To Line information. (Port range: 1~2)
Note:
   Hotline feature should be used together with:
      $sysconf -service 2 (HotLine service)
      $sysconf -2nddial 0 (2nddial off)
      $h323    -mode    1 (peer-to-peer mode)
   Line To Line feature should be used together with:
      $sysconf -service 2 (HotLine service/Line To Line )
      $sysconf -2nddial 1 (2nddial on)
      $h323    -mode    1 (peer-to-peer mode)
Example:
   bureau -pstn 2011 2012
   bureau -table 1 192.168.4.69 628 2 192.168.4.200 9992
```

Parameter Usages:

- print: display bureau line information and configuration.

```
---------------------------------------------------------------------------------------------
usr/config$ bureau -print

Bureau line setting relate information
   PSTN number        : 2011 2012 2013 2014 2015 2016
   Hold tone generation : On
   Hot line / Line to Line table
=============================================================
====
Port    Destination Address      Remote TEL/CHANNEL
-----------------------------------------------------------------------------------------------
1           192.168.4.69          628
2           192.168.4.69          628
=============================================================
=====
```

- pstn: PSTN number (per port basis). This number is used to display as a caller ID when the caller ID is not available. The maximum digit length is 32.
- hold: while the terminals support H.450 **hold** function, the WellGate 3804 will play the hold tone to PSTN side.
- table: Set Hot line/LineToLine destination IP and e164 numbers information. (Port range: 1~2)

Note:
1. HotLine and LineToLine functions are using the same table.
2.In HotLine service, user have to set No. prepared to dial out; in LineToLine service ,user have to set port No.
For example, if user set bureau –table 1 192.168.4.69 628 in hotline service, after user dial in WellGate 3804 port 1, WellGate 3804 will direct dial to 192.168.4.69 and dial 628 to PSTN side, then Phone 628 will ring, user will hear ring back tone.
If user set bureau –table 1 192.168.4.69 1 in LineToLine service, after user dial in WellGate 3804 port 1 , WellGate 3804 will direct dial to 192.168.4.69 port 1,user will hear dial tone, then user can dial out No. to PSTN side.

5.21 [prefix] command

This function can do digits replacement of incoming call from IP side or PSTN side.

```
---------------------------------------------------------------------------------------------
usr/config$ prefix

Prefix setting information and configuration
Usage:
prefix [-pstnrule index oldnumber newnumber (index = 1 ~ 6)]
      [-iprule index oldnumber newnumber (index = 1 ~ 6)]
prefix -print

   -print     Display prefix information and configuration.
   -pstnrule   Set PSTN incoming prefix rule information.
   -iprule     Set IP incoming prefix rule information.
Example:
   prefix -pstnrule 1 2 8862 : prefix 2 will be replaced with 8862
```

Parameter Usages:
-print print current setting in **prefix** command.
-pstnrule to do digit replacement of incoming call from PSTN side. Ex, to set **prefix –pstnrule 1 123 456**，which means the first set of PSTN side rule is: IF user press 123888 after dialing in WellGate 3804 from PSTN side ,the real number dialed out will become 456888.
-iprule to do digit replacement of incoming call from IP side. Ex, to set **prefix –iprule 1 456 789**，which means the first set of IP side rule is: IF user press 456000 after dialing in WellGate 3804 from PSTN side ,the real number dialed out will become 789000.

5.22 [rom] command

ROM file information and firmware upgrade function.

```
---------------------------------------------------------------------------------------------
usr/config$ rom

ROM files updating commands
```

```
Usage:
rom [-app] [-dsptest] [-dspcore] [-dspapp] [-rbpcm] [-htpcm]
   [-greeting] -s TFTP/FTPserver ip -f filename
rom [-method mode] [-ftp username password]
rom -print
   -print       show versions of rom files. (optional)
   -app         update main application code(optional)
   -boot        update main boot code(optional)
   -dsptest     update DSP testing code(optional)
   -dspcore     update DSP kernel code(optional)
   -dspapp      update DSP application code(optional)
   -rbpcm           update RingBack Tone PCM file(optional)
   -htpcm           update Hold Tone PCM file(optional)
   -greeting    update Greetings PCM file(optional)
   -askpin      update AskPin file(optional)
   -s           IP address of TFTP/FTP server (mandatory)
   -f           file name(mandatory)
   -method      download via TFTP/FTP (TFTP: mode=0, FTP: mode=1)
   -ftp         specify username and password for FTP
Note:
   This command can run select one option in 'app', 'dsptest', 'dspcore',
   'dspapp', and 'rbpcm'.
Example:
   rom -method 1
   rom -ftp vwusr vwusr
   rom -app -s 192.168.4.101 -f app.bin
```

Parameter Usages:

-print show versions of all rom files

-app, boot, dsptest, dspcore, dspapp to update main Application program code, Boot code, DSP testing code, DSP kernel code, or DSP application code.

-boot2m **boot2m** parameter let users to upgrade the whole system flash, including all the firmware that mentioned above. If 2M rom file update is executed, ***users have to set again the MAC address of WellGate 3804 or it will cause conflict on Ethernet because the original MAC address is erased during 2M ROM file upgrading.***

Note: To set mac address please key in command setmac:(when key in MAC address ,press enter each time after key in two characters):

```
usr/config$ setmac

- enter mac address
00
01
a8
00
0x
xx
- the mac address is 00 01 a8 00 0x xx
- if mac address is correct, please press 'y' to
  setup configuration, else press 'n' to continue
```

-greeting The greeting file can be updated by users. The attributes of

sound file should complied to: μ-law, 8000 Hz , 8-bit, Mono, 7 kb/s

-askpin update ASKPIN sound file. This is the greeting sound that when asking for pincode.

-s to specify TFTP server's IP address when upgrading ROM files.

-f to specify the target file name, which will replace the old one.

-method to decide using TFTP or FTP as file transfer server. "0" stands for TFTP, while "1" stands for FTP.

-ftp if users choose FTP in above item, it is necessary to specify pre-defined username and password when upgrading files.

5.23 [passwd] command

For security concern, users have to input the password before entering configuration mode.

```
usr/config$ passwd
Password setting information and configuration
Usage:
passwd -set Loginname Password
Note:
Loginname can be only 'root' or 'administrator'
Example:
  passwd -set root 2fxo
```

Parameter Usages:

-passwd <*login name*> <*password*>

Note: <login name> *can be "root" or "administrator" only. "root" and "administrator" have the same authorization, except3 commands that can be executed by "root" only – "passwd –set root", "rom –boot", and "flash –clean"*

6. Upgrade the WellGate 3804

WellGate 3804 supports remote download via TFTP for updating the new rom file. Regarding new version release, please contact local distributor for more information.

TFTP/FTP server

It is necessary to prepare the TFTP/FTP server program on the host PC as TFTP/FTP server. After TFTP/FTP program set up on one PC and connecting to network, WellGate 3804 is ready to be updated.

Download Procedure

Associated with Chapter 5.12 [rom] command:

-print show versions of all rom files

-app, boot, dsptest, dspcore, dspapp to update main Application program code, Boot code, DSP testing code, DSP kernel code, or DSP application code.

-boot2m **boot2m** parameter let users to upgrade the whole system flash, including all the firmware that mentioned above. If 2M rom file update is executed, ***users have to set again the MAC address of WellGate 3804 or it will cause conflict on Ethernet because the original MAC address is erased during 2M ROM file upgrading.***

Note: To set mac address please key in command setmac:(when key in MAC address ,press enter each time after key in two characters):

```
---------------------------------------------------------------------------------------------
usr/config$ setmac

- enter mac address
00
01
a8
00
0x
xx
- the mac address is 00 01 a8 00 0x xx
- if mac address is correct, please press 'y' to
  setup configuration, else press 'n' to continue
```

-greeting The greeting file can be updated by users. The attributes of sound file should complied to: μ-law, 8000 Hz , 8 bit, Mono, 7 kb/s

-askpin update ASKPIN sound file. This is the greeting sound that when asking for pincode.

-s to specify TFTP server's IP address when upgrading ROM files.

-f to specify the target file name, which will replace the old one.

-method to decide using TFTP or FTP as file transfer server. “0” stands for TFTP, while “1” stands for FTP.

-ftp if users choose FTP in above item, it is necessary to specify pre-defined username and password when upgrading files.